VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

On page 1, please delete the paragraph beginning on line 16 through line 20, and replace it with the following:

The application of high-frequency (HF) alternating currents (specifically in the frequency range of between 300 kHz and 2 MHz) to generate high temperatures for tissue coagulation as a surgical procedure has long been known. In practice monopolar or bipolar electrode arrangements are used for introducing the HF-current into the tissue.

On page 1, please delete the paragraph beginning on line 21 through line 30, and replace it with the following:

In the case of the monopolar arrangements, an electrode - also referred to as the neutral electrode - is designed in the form of a patient delivery line of large area and fixed to the patient not too far away from the point of intervention and earthed or connected to ground. A second electrode which is manipulated by the operator - also referred to as the active electrode - is connected to the alternating or HF current generator. In terms of its shape, the second electrode is selected to be adapted to the respective use involved, in particular the size of the tissue region to be treated, in such a way that both the operational time and also the thermal loading of the region of the body or organ involved are reasonable.

On pages 5 and 6, please delete the paragraph beginning on line 29 of page 5 through line 5 of page 6, and replace it with the following:

The effective temperature profile control device can also be adapted to produce and supply a heating output control signal for controlling the [alternating] HF current power and/or the spatial

distribution thereof, and can be connected to the [alternating] HF current source by way of a control input so that, besides the cooling device, it can also control the HF-source - acting as a "heating device" in the tissue. That provides for particularly flexible control of the treatment regime in the event of longer-duration intervention procedures.

On page 6, please delete the paragraph beginning on line 6 through line 18, and replace it with the following:

The effective temperature profile control device preferably includes an interactively programmable calculation unit for determining simulated time-dependent effective temperature profiles on the basis of parameters of the tissue and the electrode arrangement and assumed parameters of the [alternating] HF current source and the heating or cooling device and for effecting a variation in the assumed parameters to ascertain an optimized effective temperature profile. In practice, use will be made of a PC with which the spatial temperature distribution and optionally the time-dependency thereof can be determined and on the screen of which the simulated effective temperature profiles can be represented as an image. That already makes it considerably easier for the operator, prior to an intervention procedure, to select a suitable combination of control values of the temperature control device and the HF-source.

On pages 6 and 7, please delete the paragraph beginning on line 27 of page 6 through line 2 of page 7, and replace it with the following:

Additional possible options in that respect are afforded by the provision of a device for ascertaining (especially in time-dependent fashion) the heating or cooling output produced by the temperature control device or a value influencing the heating or cooling output, and a device for ascertaining the [alternating] HF current power

outputted by the [alternating] HF current source, or a value influencing such current power.

On page 9, please delete the paragraph beginning on line 3 through line 14, and replace it with the following:

It can already be seen at the few current density areas which can be seen at all in the longitudinal section, from the Table (essentially only the areas represented by the lines a through g), that current density peaks occur at the tip and in each of the boundary regions of the electrodes 12, 13 in relation to the insulating portions 11, 15 of the arrangement and the current density overall already falls severely at a small [spacing] distance from the surfaces. This shows that it is to be assumed that by far the greatest part of the electrical energy which is introduced into the body tissue 14 by the electrode arrangement 10 is converted into thermal energy in the tissue regions immediately adjoining the electrode surfaces. Tissue coagulation begins in the zones of highest current density at the mutually facing electrode edges.

On page 9, please delete the paragraph beginning on line 15 through line 27, and replace it with the following:

As is diagrammatically shown in Figure 2, that results in the formation of a drying-out zone approximately in the configuration of a narrow rotational ellipsoid around an electrode arrangement of that kind. The electrode arrangement 20 shown in Figure 2 - in a slightly modified form in comparison with the configuration shown in Figure 1 - includes two cylindrical electrodes 22, 23 of equal length which are [let] fitted into a cylindrical carrier 21, while the tip 20a is here of an insulating nature. The surrounding tissue 24 is divided [in dependence] depending on the temperature and the changes in tissue produced thereby into the drying-out zone 24A, a coagulation zone 24B and a structurally unchanged ("native") outer region 24c. In

addition, particularly with a high level of power being introduced, a carbonization layer or zone (not shown in the Figure) can be formed directly at the surface of the arrangement.

On page 14, please delete the paragraph beginning on line 4 through line 20, and replace it with the following:

In particular, for the insertion phase, the fluid temperature and therewith (HF-generator [80] switched off) the temperature of the HF-needle [81] can be raised by means of the fluid heater 85 to a valve in the region of body temperature (e.g., about 37°C) or above. In this phase the fluid pump 84 can be operated with a relatively low delivery or intermittently and a T-regulation action can possibly be omitted. After positioning of the HF-needle and when the HF-generator is switched on - or even better with a time delay after it is switched on, such time delay being predetermined or derived from signals from the T-sensor - the fluid heater is switched off. In that phase, in the normal situation, the fluid pump is controlled on the basis of the predetermined target temperature field or range and with evaluation of the signals from the T-sensor, so that T-regulation then takes place. However differentiated actuation of the fluid pump and the fluid heater can also be implemented throughout the entire interventional procedure on the basis of a predetermined time-dependent target temperature field or range which takes account of the particular requirements of the insertion phase.

On page 15, please delete the paragraph beginning on line 7 through line 17, and replace it with the following:

The evaluation and control device 87 includes as its main components a procedure control (controller) 87.1, an effective temperature profile calculation unit 87.2 and a control valve calculation unit 87.3. Associated with those components in the usual manner are separate program and data stores 87.2a, 87.2b and 87.3a,

87.3b respectively and jointly and I/O-interface 87.4, an input unit 87.5 and a display unit 87.6. The control valve calculation unit 87.3 additionally has associated therewith at its output side a control procedure store [87.6] for storage of calculated time-dependencies of the cooling and heating output control signal whose access control (not shown separately) is connected to the controller 87.1.

In the Abstract of the Disclosure:

Please delete the Abstract of the Disclosure and replace it with the following:

An electrode arrangement [for electrothermal treatment of human or animal bodies] is provided[,] having at least one electrode for insertion into a human or animal [the] body[, said electrode being situation on an electrode support] for electrothermal treatment of the body. [Said] The electrode is situated on an electrode support and is connected to an alternating current source via a supply lead and to a temperature stabilizer device for influencing the effective temperature profile in the treatment area. The electrode support and the electrode, or electrodes, are constructed for direct insertion into the body tissue, said insertion being channel forming. The temperature stabilizer device has a timed heating device for thermal support of the insertion.

In the Claims:

Amend claims 14, 15, 18 and 21 as follows:

14. (Twice Amended) An electrosurgery apparatus comprising:

an electrode carrier having a distal end;

at least one electrode on the electrode carrier;

an alternating current source conductively connected to the electrode by way of a cable providing alternating current flow to said at least one electrode;

a temperature control device for the electrode and the electrode carrier, wherein the electrode carrier is of a pointed configuration at its distal end; and

a fluid heater [heating means by way of which] for heating the at least one electrode and the electrode carrier [are heatable independently] independent of the amplitude of the alternating current flowing through the at least one electrode.

15. (Twice Amended) An electrosurgery apparatus as set forth in claim 14 wherein the at least one electrode and the electrode carrier are heatable to a temperature of more than [30 degrees] 30°C.

18. (Twice Amended) An electrosurgery apparatus as set forth in claim 14 wherein one of the at least one electrode and the electrode carrier has a thermoelectric heating and cooling device.

21. (Twice Amended) An electrosurgery apparatus as set forth in claim 19 or claim 20 wherein the effective temperature profile control device comprises an interactively programmable effective temperature profile calculation unit for determining simulated, time-dependent effective temperature profiles on the basis of parameters of a tissue and the electrode and assumed parameters of the alternating current source and the temperature control device, and for varying the assumed parameters to ascertain an optimized, time-dependent effective temperature profile.

CC PAS411108.1-*-2/8/02 2:37 PM